

Title (en)  
High frequency printing mechanism

Title (de)  
Hochfrequenzdruckvorrichtung

Title (fr)  
Mécanisme d'impression à haute fréquence

Publication  
**EP 0510648 B1 19960814 (EN)**

Application  
**EP 92106964 A 19920423**

Priority  
US 69158491 A 19910424

Abstract (en)  
[origin: EP0510648A2] High frequency printing mechanism with an ink-jet ejection device which is capable of ejection of ink (including hot melt ink) at jet frequencies greater than 50,000 Hz. A cantilevered beam (12) is mounted at its base (14) to a piezoelectric element (18) which oscillates the base. The beam is shaped so that its moment of inertia is reduced toward its free end (16). The element (18) is activated by an oscillating electrical signal the frequency of which is equal to or close to a natural frequency of oscillation of the beam (12). At this frequency of oscillation of the beam, the tip (15) of the beam oscillates over an amplitude which is significantly greater than the oscillation amplitude of the base. The tip (15) of the beam is provided with an aperture which is preferably tapered in cross-section. One opening of the tapered aperture is in fluid communication with a reservoir (19) of ink and the other opening of the aperture is positioned at an appropriate distance from a printing paper towards which individual droplets of ink from the reservoir are to be propelled. When the tip amplitude is above a predetermined threshold, the solid-fluid interaction between the aperture and the ink causes a drop of ink to be accelerated through the aperture and be ejected upon each excursion of the tip of the beam toward the printing media. <IMAGE>

IPC 1-7  
**B41J 2/04**

IPC 8 full level  
**B41J 2/015** (2006.01); **B41J 2/04** (2006.01); **B41J 2/045** (2006.01); **B41J 2/055** (2006.01); **B41J 2/175** (2006.01)

CPC (source: EP KR US)  
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Cited by  
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